

Amendments to the Drawings:

The attached sheets of drawings include changes to Figs. 1, 4, 5 and 6. The enclosed sheets, which include Figs. 1-6, 7A and 7B, respectively, replace the previously filed sheets including those Figures.

In Fig. 1, the reference number 44 has been added. This amendment is supported by the description in, for example, paragraph [0028]. Also, reference number "98" was changed to "30" as reference number "30" corresponding to the tube itself while reference number "98" corresponding to the exterior surface of the tube. This amendment is supported by the description in, for example, paragraphs [0027] and [0034].

In Fig. 4, the size of inner diameter D_1 of collar 24 has been corrected. This amendment is supported by the description in, for example, paragraph [0030].

In Fig. 5, reference number " D_1 " was corrected to " d_i ". This amendment is supported, for example, by the disclosure in paragraph [0031]. Also, reference number "82" has been removed.

In Fig. 6, reference number "82" has been removed.

Attachments: Replacement Sheets

Remarks/Arguments

This Response is being made to the Office Action mailed October 01, 2004.

A. The Objection to the Specification

The specification is objected to by the Examiner for the reason that the title of the invention is not descriptive. The title of the invention has been amended to indicate the invention to which the claims are directed.

Paragraphs [0009] and [0034] of the specification have been amended to correct minor editorial problems, including typographical, grammatical and idiomatic errors appearing in those paragraphs. The remaining paragraphs have been amended to conform their descriptions to other portions of the specification or to simply improve the overall clarity of the disclosure. No new matter has been added.

More particularly, replacement paragraphs [0025] and [0033] amend "FIG. 7" to read "FIGS. 7A and 7B" so that the correct figure numbers shown in drawing sheets are accurately cited in the specification. Replacement paragraph [0031] corrects the reference number of the tabs, as reference number 70 corresponds to the recessed regions in Figs. 1, 4, and 5. This amendment is supported, for example, by the text in the earlier part of paragraph [0031] itself while the tabs correspond to reference number 68 as reflected in paragraphs [0030]-[0031] and [0033]-[0035]. In addition, "grooves" was amended to read "grooves 74" and "groove" was amended to read "groove 74". In replacement paragraph [0033], reference number 25 for the bracket end region was corrected to reference number 28. This amendment is supported by the text of paragraph [0027], as well as Figs. 1, 2, and 7B. Finally, in paragraph [0035], reference number 78 was corrected to reference number 76. This amendment is supported by the text of paragraph [0031], as well as Fig. 5. In addition, several minor editorial amendments were made to improve the readability of the disclosure.

B. The Objection to the Drawings

The drawings are objected to by the Examiner. First, the Examiner indicates that the specification cites "Fig. 1" however, there is no Fig. 1 in the drawings. Applicants believe that this statement resulted from a typographical error in the Office Action as the drawings clearly include a Fig. 1 and what the Examiner meant to say was that the specification cites "Fig. 7" however, there is no Fig. 7 in the drawings. This mistake has been corrected by conforming the

specification to the drawings by amending "Fig. 7" to -- Figs. 7A and 7B -- throughout the specification. The Examiner also indicates that in Fig. 5, "D₁" should be -- d₁ --. This is corrected in the drawing replacement sheet that includes Fig. 5.

The drawings are also objected to because they do not include reference numbers "44" and "78" mentioned in the description. Reference number "44" has been added to Fig. 1 of the replacement sheet of drawings. As to reference number "78", an amendment has been made in paragraph [0035] to correct reference number "78" to -- 76 --, therefore, all reference numbers mentioned in the description appear in the drawings.

Finally, the drawings are objected to because they include reference numbers "82" which is not mentioned in the description. Accordingly, reference numbers "82" has been removed from Fig. 5 and Fig. 6 of the replacement sheet of drawings.

C. The Objection and Rejections of the Claims

Turning to the claims, claims 1-7 and 9-11 remain in this application. Claims 8 and 12-19 were cancelled. Claims 20-33 have been added by the present Amendment to more fully protect the disclosed inventions. These claims 20-33 are drawn to a metal tube and a metal tube support bracket combination in a manner that is neither disclosed or suggested in the prior art of record and are patentably distinguishable there over.

Of the pending claims, claims 1 and 11 stand objected to, and claims 1-11 stand rejected. The claim objections and rejections are now addressed below.

C1. The Objection of Claims 7 and 11

Claims 7 and 11 have been amended to place them in proper dependent form, i.e., drawn to structural limitations. Accordingly, the objection to claims 7 and 11 should now be moot.

C2. The Rejection of Claim 8 Under 35 U.S.C. § 112

Claim 8 stands rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the applicant regards as the invention. To advance prosecution, and without acquiescing to the Office Action rejection, claim 8 has been canceled. Therefore, the § 112 rejection of claim 8 is now moot.

C3. The Rejection of Claims 1, 3 and 6 Under 35 U.S.C. § 102

Claims 1, 3 and 6 stand rejected under 35 U.S.C. § 102(b) as being anticipated by US Patent No. 6,158,066 to Brown et al. ("Brown").

Before analyzing the deficiencies in the teachings of the Brown patent, a brief review of independent claim 1 is appropriate. Claim 1 claims an apparatus of a tube support bracket that comprises a metal support bracket having a circular tube-receiving aperture and an annular, castellated collar abutting said aperture, said aperture and collar being sized for receiving therethrough in close-fitting relationship a metal tube, said collar being formed having a plurality of spaced-apart, **axial tabs sized for swaging against said received metal tube to generate a hoop stress and bite said received metal tube.**

The Brown patent discloses an anti-rotation pipe locating and support device. In relevant part, the Brown patent teaches:

The skirt 36 desirably has *at least one prong or leg 44* (FIG. 4) that is curved with a width at the proximal end 38 larger than the width at the distal end 40. As best seen in FIG. 4, the illustrated embodiment has four prongs 44 of about equal sizes equally distributed along the circumference of the skirt 36. There is one latch or engagement protrusion 46 on the outer surface of the skirt 36 generally running the length of the skirt 36. The protrusion 46 may also be thought of as an external rib. Preferably, there is a generally rectangular, longitudinal ramped protrusion 46 on the outer surface of each of the four prongs 44, desirably along the centerline of each prong 44. The thickness of the protrusion 46 is substantially zero near the distal end 40 of the skirt 36 and gradually increases towards the proximal end 38 to a maximum thickness at a location spaced from the proximal end 38 of the insert 20.

(Brown col. 8, line 64 – col. 9, line 12 (emphasis added).)

In view of the foregoing, the Brown patent clearly fails to teach or suggest **axial tabs sized for swaging against said received metal tube to generate a hoop stress and bite said received metal tube.** In fact, the Brown patent has never suggested that the prong or leg (44) can be (or should be) bent or swaged toward the pipes (12, 14), not to mention that the prong or leg (44) can bite into the pipes (12, 14). Therefore, it is clear that Brown neither anticipates nor makes the device of this invention obvious. Accordingly, claim 1 in its prior iteration adequately distinguished over the reference to Brown. However, so as to move this case and all pending

claims to issue, Claim 1 has been amended to describe more clearly how the tabs are sized for swaging against the received metal tube.

Once the rejection to Claim 1 is removed, then each of the currently rejected dependent claims 3 and 6 become allowable.

C4. The Rejection of Claims 1 and 3-8 Under 35 U.S.C. § 103

Claims 1 and 3-8 stand rejected under 35 U.S.C. § 103(a) as being anticipated by US Patent No. 1,127,844 to Anderson ("Anderson") in view of US Patent No. 3,193,613 to Van Buren, Jr. ("Van Buren").

Anderson teaches a flue supporting structure, especially, the invention is concerned with the danger of fire. The stove pipe (15) is yieldingly engaged by a plurality of points (13). In relevant part, the Anderson patent teaches:

On the base plate 10 is formed *a plurality of points 13 which extend upwardly about a central opening 14 and yieldingly engage the stove pipe indicated at 15.* This arrangement of the points 13 not only permits the yielding engagement of the stove pipe, but it renders it possible to use stove pipes of varying sizes. The plate 10 and the point of entry of the stove pipe is supported entirely below the line of the ceiling and since everything above the plate 10 is inclosed by the wall of brick 11, forming the flue, it follows that fire is effectually guarded against.

(Anderson lines 41-54 (emphasis added).)

Van Buren teaches a combination conduit and connector device which may be used as a carrier and/or protecting means for electrical wires such as may be necessary in electrically connecting various devices where wiring may be protected. In relevant part, the Van Buren patent teaches:

The invention, as illustrated, includes *a conduit 6 of extruded plastic flexible tubing to one end of which is attached a snap fastener type plug button 7 by the use of a jamming plug 8 of plastic material in the form of a tube, and having an annular groove 9.* The plug 8 is of such dimensions that when it is forced into the tubing, the tubing will be expanded around a smooth flange 10 surrounding an aperture in the plug button 7 and the material of the conduit 6 will be forced into the groove 9 so that the plug button 7 and flexible conduit 6 are completely strongly interlocked, as will be seen in FIG.2.

The plug button 7 has *a yieldable means to snap through an aperture 11 in the units 1, 4, or 5 and this yielding means is shown in the form of a plurality of fingers 12 which are shaped in such a manner that the plug button together with the assembled conduit 6 may be snapped through the hole 11 and held strongly in place.* It will be obvious that the fastener could be so shaped that the yielding fingers could have sharp shoulders for positive interlocking engagement with the unit 1.

(Van Buren col. 1, line 68 – col. 2, line 16 (emphasis added).)

Although both Anderson and Van Buren mention a pipe and the ways the pipe is fastened, the teachings in Anderson and Van Buren make clear that the structure taught in Anderson and Van Buren are fundamentally different than the structure claimed in claim 1. In particular, the structure of claim 1 is a metal support bracket having a circular tube-receiving aperture and an **annular, castellated collar** abutting said aperture, said aperture and collar being sized for receiving therethrough in close-fitting relationship a **metal tube**, said collar being **formed having a plurality of spaced-apart, axial tabs sized for swaging against said received metal tube to generate a hoop stress and bite said received metal tube.**

In the Office action, reference number 7 of the Van Buren patent is construed as the **castellated collar** which is missing in Anderson. However, in Van Buren, reference number 7 is referred to as *“a snap fastener type plug button 7”* (Van Buren col. 1, line 71). The snap fastener type plug button 7 is attached to one end of a conduit 6 of extruded plastic flexible tubing by the use of a plastic jamming plug 8 having an annular groove 9. The plug button 7 has a plurality of fingers 12 to snap through an aperture 11 in the units 1, 4, or 5.

However, this snap fastener type plug button 7 is not a **castellated collar** as required in claim 1. First, the castellated collar is a part of the metal support bracket in claim 1. By contrast, the snap fastener type plug button 7 is not a part of the units 1, 4, or 5. It is clear that the snap fastener type plug button 7 and the units 1, 4, or 5 are separate parts and therefore the snap fastener type plug button 7 requires a plurality of fingers 12 to snap through an aperture 11 in the units 1, 4, or 5. Although the fingers 12 make the snap fastener type plug button 7 look like a castellated collar, however, the function of these fingers 12 are used to push against the units 1, 4, or 5 so that the snap fastener type plug button 7 and the conduit 6 can be fastened to the units 1, 4, or 5. However, the fingers 12 are not even in contact with the conduit 6, not to mention that

they do not constitute **axial tabs sized for swaging against said received metal tube to generate a hoop stress and bite said received metal tube** as required in claim 1. Further, the material of the conduit 6 is plastic which is not durable for the fingers 12 to bite into a metal tube as claim 1 requires.

Besides the foregoing, the structures disclosed in Anderson and Van Buren are basically different. In Anderson, the support bracket (base plate 10) and the tabs (points 13) are built together and there is no need to fasten them while in Van Buren, the support bracket (units 1, 4, or 5) are separated from the alleged collar (snap fastener type plug button 7) and the alleged tabs (fingers 12) and therefore, a yielding means to fasten them is required. Because of this difference, one of ordinary skill in the art would not even combine the structures disclosed in Anderson and Van Buren.

In view of the foregoing, the Anderson and Van Buren patents in combination clearly fail to teach or suggest each and every elements in claim 1. Therefore, the rejection of claim 1 over Anderson in view of Van Buren under 35 U.S.C. § 103(a) is without merit and should be withdrawn. Once claim 1 is allowed, all dependent claims 2-8 should also be allowed.

C5. The Rejection of Claims 2 and 9-11 Under 35 U.S.C. § 103

Claims 2 and 9-11 stand rejected under 35 U.S.C. § 103(a) as being anticipated by Anderson combined with Van Buren in view of US Patent No. 5,693,910 to Gretz ("Gretz").

Claims 2 depends from claim 1. In addition to the claim limitations of claim 1, claim 2 further requires that the **inner surface of each of the collar tabs is formed having at least one axial groove formed therein**, said groove being configured for receiving exterior regions of said received tube when the collar is swaged tightly against the tube to thereby lock the tube in the collar and thus in the support bracket.

Gretz teaches an electrical connector with jaws designed in the electrical connector such that a positive bite or grip is applied to an oval or circular non-metallic sheathed cable as tension is applied on the cable to attempt to remove it from the electrical junction box. In relevant part, the Gretz patent teaches:

The gripper jaws 24, as depicted in FIG. 2, are each supported by an angled support 29 having an inboard end 31 and an outboard end 33. Each angled support 29 contains a slot 28 that adds flexibility to the gripper jaw 24 and angled support 29 when a

cable is being inserted through the connector 20. The slot allows the gripper jaw 24 to flex outwardly to accommodate the cable, while still allowing enough stiffness for gripper jaw 24 to apply a strong restraining grip when tension is applied in an attempt to remove said cable from said junction box. The angle of the support 29 is formed as part of the outer conical surface 82.

The edges of the gripper jaws 24, as depicted in the cross-sectional view shown in FIG. 6, are designed with an indented edge 36. The gripper jaws 24 typically spread apart when non-metallic shielded cable is inserted along central axis 68 with the cable contacting the first angled surface 42 on the underside of the gripper support 29. Further insertion causes the second angled surface 40 to also come into contact with the cable. *After the cable is inserted as far as desired, tension may be applied to the cable in the opposite direction, or away from the box. This action causes gripper edge 38 to bite into the cable and lock it in place. The bite or grip caused by gripper edge 38 of gripper jaws 24 is non-abrasive as a result of the resilient material of construction of connector 20, and does not tear, abrade, or puncture the shield of said cable.* The cable is however securely locked inside the junction box by this action.

(Gretz col. 4, line 59 – col. 5, line 18 (emphasis added).)

Depicted in FIG. 5 are two jaw grooves 58 in the interior surface of connector wall 26 that define the jaws, both the gripper jaws 24 and centering jaws 44. A slot groove 56 also is depicted in connector wall 26 extending from slot 28. *The grooves are cut into connector wall 26 to add desired flexibility to the connector while at the same time maintaining structural integrity of the connector 20.*

(Gretz col. 6, lines 1-7 (emphasis added).)

Claim 1 alone is distinguishable to the combination of Anderson, Van Buren, and Gretz. The further limitation in claim 2 makes the gap even greater.

In the Office action, the jaws (reference number 24) of the Gretz patent are construed as the tabs of claim 1 and the jaw grooves (reference number 58) of the Gretz patent are construed as the axial grooves which are missing in Anderson combined with Van Buren.

However, in claim 2, **the collar tabs is formed having at least one axial groove formed therein.** By contrast, in the teaching of Gretz, the jaw grooves (58) are not on the jaws (24), but rather are cut into the connector wall (36). Because the jaw grooves (58) are not on the jaws (24), there is no teaching in Gretz that **“an inner surface of each of said collar tabs is formed**

having at least one axial groove formed therein." Further, as recited in claim 2, "said groove [is] configured for receiving exterior regions of said received tube when the collar is swaged tightly against the tube to thereby lock the tube in the collar and thus in the support bracket." By contrast, the jaw grooves 58 of the Gretz patent are used *to add desired flexibility to the connector while at the same time maintaining structural integrity of the connector 20.* (Gretz col. 6, lines 4-7 (emphasis added).)

In view of the foregoing, the Anderson, Van Buren, and Gretz patents in combination clearly fail to teach or suggest each and every elements in claim 2, and thus fail to render claim 2 obvious. Therefore, the rejection of claim 2 over Anderson combined with Van Buren and in further view of Gretz under 35 U.S.C. § 103(a) is without merit and should be withdrawn. Because claim 9 include the same limitations as those found in claim 2, claim 9 is similarly patentable over Anderson, Van Buren, and Gretz. Once claim 9 is allowed, dependent claims 10-11 should also be allowed.

CONCLUSION

In view of the foregoing, reconsideration and allowance of this application are earnestly solicited.

Respectfully submitted,

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Attachments